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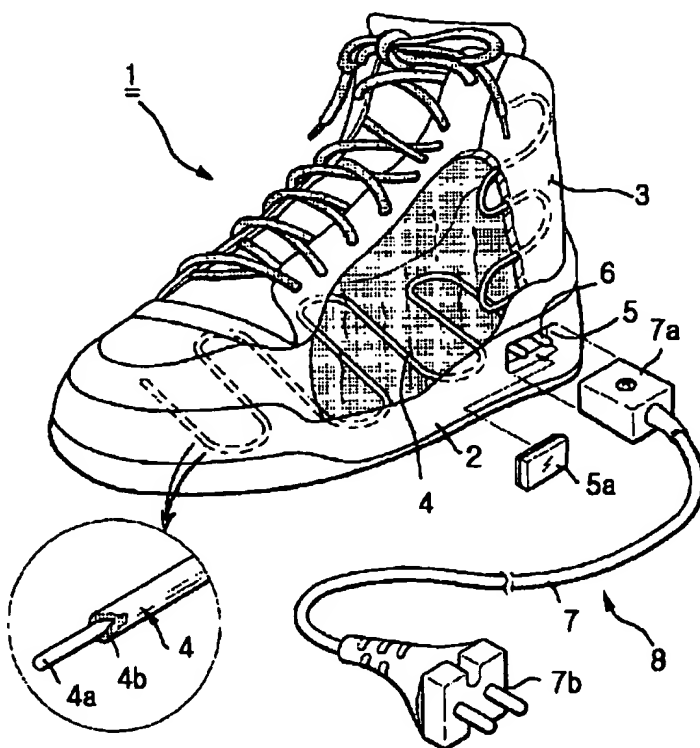
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(54) Title: THERMAL FOOTWEAR



(57) Abstract: Disclosed is a thermal footwear for shoes capable of thermal emission related to the range of far-infrared for the health of foot, and more particularly to a footwear which is devised to provide an optimum condition for the inside of footwear, dehumidifying and thereby preventing frostbite or disease due to the damp or sweat secreted in the foot. According to the embodiment of the present invention, an electric filament coated with Bio-ceramic or Germanium is embedded inside of the insole and the inner covering of shoe so that the drying and heating process powered by the electric filament provide a heat related to the far-infrared emission which stimulates the blood circulation of foot to the user of footwear.



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## Thermal Footwear

### Technical Field

5 The present invention relates to a thermal footwear capable of emitting far-infrared for the health of foot, and more particularly to a footwear which is devised to provide an optimum condition for the inside of footwear and thereby preventing frostbite or disease due to the damp or sweat secreted in the foot.

### 10 Background Art

A conventional footwear having a heating means is mainly related to generating a heat using electric filament located on the bottom of shoe or its related electrical apparatus in order to dry in fast for the wetted or frozen shoe.

15 However, the prior art has some problems in that it is difficult to utilize into the various function for the health or sanitary purpose into a common type of footwear. Generally, no conventional shoe allows typical function for the thermal protection thereof effectively in the view of foot health related to the far-infrared emission. Since the  
20 sweat secreted from the user's foot upon wearing and caused from the internal space thereof are not naturally emitted to the outside. So, the following problems are arisen in the winter time : A frozen may be generated inside of the shoe causing frostbite or uncomfortable feeling to the user's foot.

25 The inventor has developed a thermal footwear having thermal protection for a healthy footwear that is capable of obviating the above problems suffered in the conventional shoes.

### Disclosure of the Invention

30 Accordingly, the present invention is directed to an improved footwear that substantially obviates one or more of the limitations and disadvantages of the related art.

An object of the present invention is to provide a thermal footwear that is capable of completely preserving an optimum  
35 temperature inside of footwear, dehumidifying and preventing disease

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caused due to the sweat secreted from the shoes or foot.

In addition, the further object of the present invention is to provide a drying means more in a quick and convenient way when the footwear is damped or wetted.

5 To achieve these and other objects of the present invention, an electric filament coated with Bio-ceramic or Germanium is embedded inside of the insole and the inner covering of shoe so that the drying and heating process powered by the electric filament provide a heat related to far-infrared emission which stimulates the blood circulation  
10 of foot to the user of footwear.

#### **Brief Description of the Drawings**

Fig. 1 is an exploded perspective view illustrating a configuration of shoes according to the present invention ;

15 Fig. 2 is an enlarged view illustrating the embodiment of filament according to the present invention.

#### **Best Mode for Carrying Out the Invention**

Now, an explanation of the configuration and operation of an insole for shoes according to the present invention will be hereinafter  
20 discussed with the accompanying drawings.

Fig. 1 is an exploded perspective view illustrating a configuration of shoes according to the present invention ; Fig. 2 is an enlarged view illustrating the embodiment of filament according to  
25 the present invention.

A conventional type of footwear (1) having an insole (2) and a covering cloth (3) according to the present invention include a thermal filament (4) embedded on the upper part of the insole (2) and beneath of the covering cloth (3) along the inside part of footwear, and a groove (5) formed on the outside part of the insole (2) for  
30 installing a receptacle (6) which is tightly secured by a rubber (5a), and the receptacle (6) is embodied so as to combine with an electric equipment (8) having the plug (7a, 7b) and a cable (7) for the electric charging. The electric equipment (8) for power charging can  
35 be replaced with an in-site battery in the heel of shoe although it is

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not disclosed in the drawing.

The embodiment of the thermal filament (4) further comprise a coated Germanium or bio-ceramic on the circumference of the thermal filament (4) which is capable for emitting far-infrared rays.

5        According to the additional embodiment of the present invention, although it is not shown on the drawings and is not described specifically with the drawings, the above mentioned embodiment can be expanded and further applied into a separated type having the thermal function by manufacturing a separate lining  
10       footwear which is necessary for inserting into the shoe.

      The lining footwear according to the present invention is also constructed according to the main embodiment of present invention. The lining footwear include a thermal filament (4) coated Germanium or bio-ceramic on the circumference of the thermal filament (4) which  
15       is capable for emitting far-infrared rays and further comprise a receptacle (6) so as to combine with the electric equipment (8) having the plug (7a, 7b) for the electric power supply or charging.

      The embodiments under the present invention can be applied into the various type of footwear. The thermal filament (4) having  
20       Germanium or bio-ceramics embedded in a footwear or a lining of footwear provide the thermal drying in the inner part of shoe and heat conservation thereof effectively in the view of foot health related to the far-infrared emission.

      Since the sweat secreted from the user's foot upon wearing  
25       and caused from the internal space thereof are not naturally eliminated to the outside or itself. So, the following problems are arisen in the winter time : a frozen sweat or damp may be generated inside of the shoe causing uncomfortable feeling or frostbite to the user's foot. Especially, under the circumstance of snowing or raining, the foot  
30       under the footwear need the damped or frozen environment by drying and heating the surround in order to preserve its physical condition of foot in a more quick and convenient way.

      The invention under present embodiment provide the electric equipment (8) or in-sited battery thereof so that the drying and  
35       heating by emitting the far-infrared.

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**Industrial Applicability**

As clearly apparent from the foregoing, the thermal footwear for shoes according to the present invention is comprised with the thermal filament having bio-materials thereof which can emit  
5 far-infrared rays so that the foot of user feels comfortable by the emission of far-infrared rays stimulating the circulation of blood in the user's foot resulting the reduce of fatigue thereof.

Thereby, according to the present invention, the thermal footwear having the specialized thermal filament for the sanitary and  
10 health purpose is capable of effectively making a simple structure and an economical way ensuring the wide application to the various type of footwear.

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WHAT IS CLAIMED IS:

1. A thermal footwear (1) comprising :  
a thermal filament (4) embedded on an insole (2) and a  
covering cloth (3) in the inner part of footwear ;  
5 a groove (5) formed on the outside part of the insole (2) ;  
a receptacle (6) secured by a rubber (5a) for the combination  
with an electric equipment (8) having the plug (7a, 7b) ; and  
an electric equipment (8) for supplying the electric power ;
- 10 2. The thermal footwear of claim 1, wherein the thermal  
filament (4) is characterized in that a coated surface with the material  
of Germanium or bio-ceramic is formed on the circumference of said  
thermal filament (4).
- 15 3. The thermal footwear of claim 1, wherein the electrical  
equipment (8) is characterized in that said electric equipment (8) for  
the power supply is replaced by an in-site battery in the heel of shoe.
- 20 4. The thermal footwear of claim 1, wherein the thermal  
footwear further comprising :  
an insertable lining footwear ;  
a thermal filament coated by the material of Germanium or  
bio-ceramic ;  
a receptacle so as to combine with the electric equipment for  
25 the power supply.
- 30 5. The thermal footwear of claim 4, wherein the electrical  
equipment is characterized in that said electric equipment for power  
supply can be replaced with in-site battery in the heel of shoe.

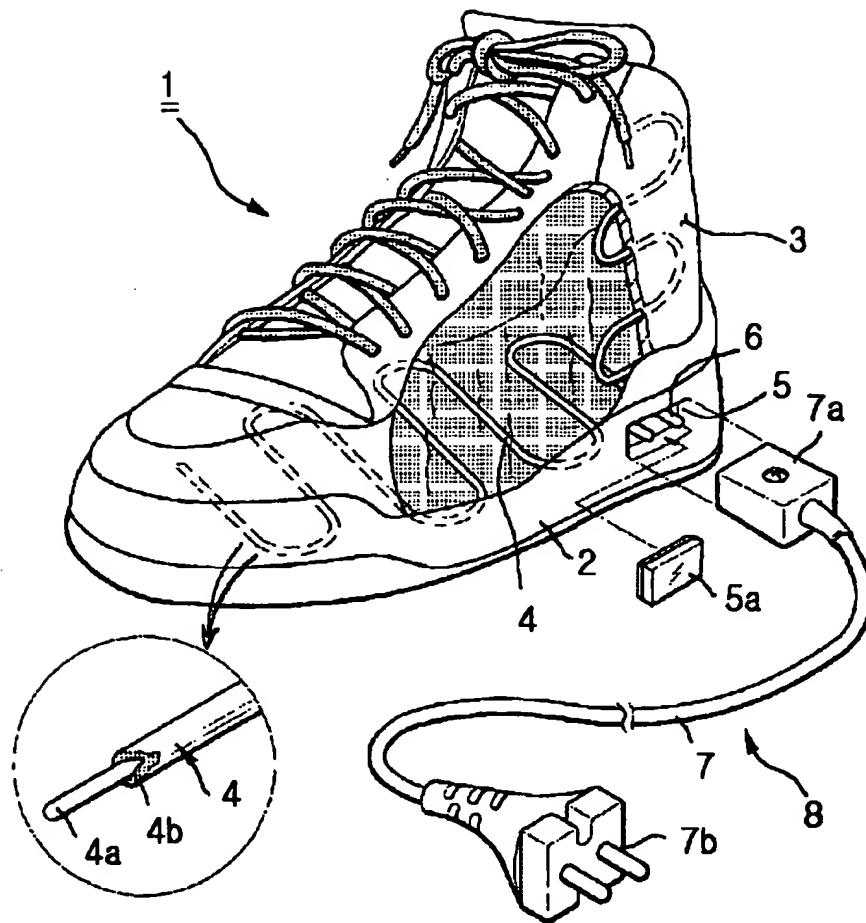
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Fig. 1



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Fig. 2

